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ABSTRACT

The 1987-88 school year was the ninth year that students in the State Bilingual and Migrant programs were assessed in reading and mathematics using a norm referenced test. This is the second year that the new California Achievement Test (CAT) Form E, normed in the Spring of 1985, has been used for program evaluation purposes. The locally adopted performance standard was that grade level post-test mean percentile scores would evidence improvement over pre-test scores. Overall, results show decreases from the previous year in the percent of grade levels meeting the performance standard in both reading and mathematics. For the State Bilingual Program, the decrease was the same. For the Migrant Program, the decrease was less in reading than in mathematics. The results of this product evaluation were combined with the results of a process evaluation to generate recommendations to improve the implementation of next year's programs. Statistical data are included in 13 tables. The appendices provide a count of program participants, an explanation of the procedure for the identification of students eligible for program participation, and a table showing mean percentile gain/loss in reading and math by building and grade for 1-12 state Bilingual and Migrant, spring 1987-spring 1988. (FMW)

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EVALUATION REPORT

STATE BILINGUAL AND ECIA
CHAPTER 1 MIGRANT PRODUCT
EVALUATION REPORT

1987-88

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DEPARTMENT OF EVALUATION SERVICES

- PROVIDING ASSESSMENT, PROGRAM EVALUATION AND RESEARCH SERVICES -

Saginaw Public Schools

Saginaw, Michigan

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STATE BILINGUAL AND ECIA CHAPTER 1 MIGRANT PRODUCT EVALUATION REPORT

1987-88

An Approved Report of the
DIVISION OF ADMINISTRATION AND PERSONNEL
Department of Evaluation, Testing and Research

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July, 1988

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PROGRAM DESCRIPTION

The Section 41, State Bilingual Education program and the E.C.I.A. Chapter 1, Migrant Education program are programs designed to meet the special educational needs of State Bilingual and Migrant students in the School District of the City of Saginaw. These programs were operated by the school district during the 1987-88 school year.

The State Bilingual and Migrant programs operated at 21 elementaries, four junior highs, and both high schools. (See Appendix A for number of students participating by building). Instruction was provided primarily on a pull-out basis, with each student receiving approximately one hour of supplemental instruction per week.

STATE BILINGUAL PROGRAM

The State Bilingual program served 803 students during the 1987-88 school year. The vast majority of the students were Hispanic, with a small number of Laotian students completing the program population.

Instruction was provided to K-6 students primarily in the areas of reading and mathematics. Students in grades 7-12 also received instruction in the basic skills, as well as counseling and support services.

MIGRANT PROGRAM

The Migrant program provided supplemental reading, mathematics, and communication skills instruction for the children of Migrant workers. A total of 443 students K-12 participated in the program.

The Bilingual programs served students whose primary language was other than English, or who came from a home environment where a language other than English was regularly used. The Migrant Education program served students

whose families follow the crops or fishing industry for a livelihood, and as a result the students experienced educational discontinuity. Although the program philosophies differ, the student populations overlap because, in most circumstances, a student in the Migrant program comes from an environment where English was not the primary language spoken in the home. In view of this fact, these two programs cooperate as one, the staff serving the students were the same, and all materials and activities were shared by the programs. (See Appendix B for a complete description of the students eligibility criteria.)

Both process and product evaluations were undertaken for the State Bilingual and Migrant Programs. This year's process evaluation was accomplished by distributing and analyzing a set of questionnaires concerning essential program components which were shared with all compensatory education teachers and each principal at the compensatory education buildings. The instruments were distributed to the respondents on January 5, 1988. Completed instruments were last received from respondents on January 29, 1988. The results of this process questionnaires were presented in a separate report published and disseminated earlier in the year.

The product evaluation, which is the focus of this report, addresses the results of student test performance. The California Achievement Tests (CAT) Form E normed the Spring of 1985 served as the evaluation instruments for grades 1-12. This was the ninth year that norm referenced tests approved by the Michigan Department of Education were used for program evaluation. The locally adopted performance standard used to evaluate program success was that: mean post-test percentile scores will evidence improvement over pre-test percentile scores. Attainment of this standard means that student rates

of learning have exceeded their normal learning rate. The reader should bear in mind that most of these students have not learned at normal rates in the past.

Students were pre- and post-tested with the CAT on a Spring to Spring basis to determine their achievement in reading and mathematics. All testing was performed on-level, that is, students took a test at a level of difficulty appropriate for their grade.

PRODUCT EVALUATION RESULTS

Results in reading and mathematics achievement will be presented for each program. Grade level results by subject area for each program will be presented and discussed. Where relatively few students were tested at any grade level and for a building, the results should be viewed with caution.

STATE BILINGUAL

Reading

Table 1 below contains the grade level results for the State Bilingual program in reading.

TABLE 1. ATTAINMENT OF THE PERFORMANCE STANDARD* IN READING IN TERMS OF PERCENTILE SCORES FOR STATE BILINGUAL PROGRAM PARTICIPANTS TESTED SPRING TO SPRING, GRADES 1-12, 1987-88.

Grade	Number of Students Pre- and Post-Tested	Percentile			Performance Standard* Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
1	100	35.2	40.0	4.8	Yes
2	91	42.0	35.0	-7.0	No
3	16	22.0	31.0	9.0	Yes
4	31	20.7	28.0	7.3	Yes
5	39	22.7	25.1	2.4	Yes
6	35	28.2	31.0	2.8	Yes
7	44	24.1	18.7	-5.4	No
8	26	17.9	16.9	-1.0	No
9	13	17.7	15.8	-1.9	No
10	9	10.6	15.6	5.0	Yes
11	3	26.0	26.0	0.0	No
12	5	22.0	18.0	-4.0	No

*Post-test percentile score will evidence improvement over pre-test percentile score.

Students tested met the performance standard at all grades except grades 2, 7, 8, 9, 11, and 12. Students in grades 1, 3, 4, 5, 6, and 10 demonstrated positive percentile gains between 2.4 to 9.0 percentile units. Thus six of the 12 (50.0%) grades attained the performance standard.

Mathematics

Grade level results are presented in Table 2 below.

TABLE 2. ATTAINMENT OF THE PERFORMANCE STANDARD* IN MATHEMATICS IN TERMS OF PERCENTILE SCORES FOR STATE BILINGUAL PROGRAM PARTICIPANTS TESTED SPRING TO SPRING, GRADES 2-12, 1987-88.

Grade	Number of Students Pre- and Post-Tested	Percentile			Performance Standard* Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	91	62.0	52.0	-10.0	No
3	17	50.0	49.0	-1.0	No
4	31	29.1	36.1	7.0	Yes
5	39	32.2	36.1	3.9	Yes
6	35	43.7	53.7	10.0	Yes
7	44	43.7	31.9	-11.8	No
8	26	22.8	22.2	-0.6	No
9	13	28.4	31.7	3.3	Yes
10	9	25.3	31.1	5.8	Yes
11	3	21.0	27.0	6.0	Yes
12	5	29.0	19.5	-9.5	No

*Post-test percentile score will evidence improvement over pre-test percentile score.

Students tested met the performance standard at all grades except grades 2, 3, 7, 8, and 12. Sixth grade students demonstrated the greatest positive percentile gain of ten percentile units while ninth graders had the smallest positive gain of 3.3 percentile points. Overall six of the 11 (54.5%) grades attained the performance standard.

MIGRANT

Reading

Grade level results are presented in Table 3 below.

TABLE 3. ATTAINMENT OF THE PERFORMANCE STANDARD* IN READING IN TERMS OF PERCENTILE SCORES FOR MIGRANT PROGRAM PARTICIPANTS TESTED SPRING TO SPRING, GRADES 1-12, 1987-88.

Grade	Number of Students Pre- and Post-Tested	Percentile			Performance Standard* Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
1	33	46.0	43.5	-2.4	No
2	34	44.3	30.5	-13.8	No
3	38	35.3	43.3	8.0	Yes
4	30	35.7	31.7	-4.0	No
5	22	36.5	39.6	3.1	Yes
6	24	35.5	36.4	0.9	Yes
7	27	32.0	23.4	-8.6	No
8	15	31.4	25.9	-5.5	No
9	13	31.8	29.1	-2.7	No
10	2	9.7	6.4	-3.3	No
11	3	22.0	26.7	4.7	Yes
12	--	--	--	--	--

*Post-test percentile score will evidence improvement over pre-test percentile score.

Students tested obtained the performance standard at grades 3, 5, 6, and 11. Grades 1, 2, 4, 7, 8, 9, and 10 failed to meet the standard. Thus four of the eleven (36.4%) grades attained the performance standard.

Mathematics

Grade level results are presented in Table 4 below.

TABLE 4. ATTAINMENT OF THE PERFORMANCE STANDARD* IN MATHEMATICS IN TERMS OF PERCENTILE SCORES FOR MIGRANT PROGRAM PARTICIPANTS TESTED SPRING TO SPRING, GRADES 2-12, 1987-88.

Grade	Number of Students Pre- and Post-Tested	Percentile			Performance Standard* Attained
		Pre Mean	Post Mean	Mean Gain/ Loss	
2	33	68.5	57.7	-10.8	No
3	38	57.1	68.4	11.3	Yes
4	30	50.7	41.4	-9.3	No
5	22	48.6	56.1	7.5	Yes
6	24	59.4	65.6	6.2	Yes
7	27	43.0	31.4	-11.6	No
8	15	24.5	31.4	6.9	Yes
9	13	36.8	34.0	-2.8	No
10	2	28.0	6.0	-22.0	No
11	3	27.7	21.3	-6.4	No
12	--	--	--	--	--

*Post-test percentile score will evidence improvement over pre-test percentile score.

Students tested obtained the performance standard at grades 3, 5, 6, and 8. Overall four of the ten grades (40.0%) attained the performance standard.

STATE BILINGUAL AND MIGRANT PROGRAMS

Table 5 below presents in summary form the attainment of the performance standard by program, subject, and grade. As these data indicate, the State Bilingual students attained the performance standard in all grades except 2, 7, 8, and 12 in both subjects; 9 and 11 in reading; and 3 in mathematics. The Migrant program attained the performance standard in all grades except 2, 4, 7, 9, and 10; 1 and 8 in reading; and 11 in mathematics. Overall the State Bilingual program seemed more effective in reading with 50.0% (6 of 12) grades attaining the standard than in mathematics with 45.4% (5 of 11). The Migrant program showed lower performance in reading with 36.4% (4 of 11) grade attainments and mathematics of 40.0% (4 of 10) grades attaining the standard.

TABLE 5. ATTAINMENT STATUS* FOR READING AND MATHEMATICS BY PROGRAM BY GRADE, 1987-88.

GRADE LEVEL	STATE BILINGUAL		MIGRANT	
	Reading	Mathematics	Reading	Mathematics
1	Yes	--	No	--
2	No	No	No	No
3	Yes	No	Yes	Yes
4	Yes	Yes	No	No
5	Yes	Yes	Yes	Yes
6	Yes	Yes	Yes	Yes
7	No	No	No	No
8	No	No	No	Yes
9	No	Yes	No	No
10	Yes	Yes	No	No
11	No	Yes	Yes	No
12	No	No	--	--
Total**				
Yes	6 (50.0%)	5 (45.4%)	4 (36.4%)	4 (40.0%)
No	6 (50.0%)	6 (54.6%)	7 (63.6%)	6 (60.0%)

*A "yes" attainment status means the average post-test percentile score was greater than the average pre-test percentile score.
**Total frequency distribution of attainment of performance by program and grade.

The achievement results, which have been presented, were also tabulated by building. These data are presented in Appendix C.

SUMMARY

The 1987-88 school year was the ninth year that students in the State Bilingual and Migrant programs were assessed in reading and mathematics, using a norm referenced test. This is the second year that the new California Achievement Test (CAT) Form E normed in the Spring of 1985 has been used for program evaluation purposes.

The locally adopted performance standard was that grade level post-test mean percentile scores would evidence improvement over pre-test scores.

Overall, the State Bilingual and Migrant programs' results show decreases from the previous year in the percent of grade levels meeting the performance standard in both reading and mathematics. For the State Bilingual program the decrease was the same (five fewer grade levels made the performance standard this year). For the Migrant program the decrease was less in reading (two fewer grade levels) than in mathematics (six fewer grade levels).

Spring to spring test results produced a total of 23 grade level observations for the State Bilingual program. The performance standard was met in 6 of 12 observations (50.0%) in reading and 5 of 11 observations (45.4%) in mathematics. The Migrant program met the performance standard in 4 of 11 observations (36.4%) in reading and 4 of 10 observations (40.0%) in mathematics. At some grade levels for both programs only a few students were pre- and post-tested, thus, the scores are perhaps not stable due to the small number of students tested. The recommen-dations that follow are based upon process and product evaluation results.

RECOMMENDATIONS

Based on this year's process and product evaluation results, the following recommendations are offered in an effort to improve the State Bilingual/Migrant programs in the future.

- Explore the reasons why students in seventh grade and the majority of the remaining secondary level failed to demonstrate achievement gains. This may include designing a new needs assessment and/or incorporating different instructional strategies aimed at increasing reading and mathematics academic skills.

- Review other selection instruments for students who lack California Achievement Test (CAT) results or those potentially eligible students who do not do poorly on CAT. A pilot testing of the new selection instrument(s) should be undertaken to determine its technical adequacy.

- Continue to define at the secondary level, a standard set of reading and math materials. After the set of core materials has been identified, purchase adequate amounts for each secondary State Bilingual/Migrant building.

- Assess the instructional time students are receiving by subject area versus the results obtained. Staff may find more time needs to be allocated to instruction in reading.

- Institute a periodic testing of identified objectives for all grade levels. These objectives would provide a basis for all State Bilingual/Migrant teachers to chart the progress of each student and utimately determine instructional effectiveness.

- Explore other alternatives to lower the student to staff ratios and to make those ratios more consistent across buildings. Present funding levels make it impossible to lower the ratio further without assistance from other sources.

- Record building level instructional activities that happen monthly. These activities then should be communicated through a calendar of events from each teacher to the supervisor.

- Identify procedures that make State Bilingual/Migrant scheduling easier and share these procedures during pre-service sessions at the start of the school year.

- Work with the Instructional Staff Development Center (ISDC) staff to design an appropriate set of inservice activities to meet the professional needs of both elementary and secondary State Bilingual/Migrant teachers.

APPENDICES

APPENDIX A

1987-88 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: State Bilingual, Total Participants

Building	K	1	2	3	4	5	6	Total
E. Baillie	0	0	0	0	0	0	0	0
Coulter	5	3	2	1	0	1	1	13
Emerson	11	10	10	3	0	1	0	35
Fuerbringer	9	5	8	0	0	1	3	26
N. Haley	7	12	6	0	1	0	1	27
Handley	0	0	0	0	0	0	0	0
Heavenrich	5	1	1	1	0	0	0	8
Herig	3	5	5	1	2	4	2	22
Houghton	5	6	0	0	1	1	1	14
Jerome	15	28	3	1	8	2	4	61
Jones	4	5	2	1	1	2	0	15
Kempton	3	5	6	1	0	1	0	16
Longfellow	8	22	12	1	3	1	2	49
Longstreet	1	4	2	0	2	1	1	11
J. Loomis	9	8	11	0	1	3	6	38
Merrill Park	9	7	5	0	1	3	4	29
C. Miller	2	6	4	1	0	2	0	15
J. Moore	9	7	1	1	1	6	1	26
Morley	1	0	3	0	0	0	0	4
J. Rouse	14	33	15	2	8	7	8	87
Salina	4	6	1	1	0	0	0	12
Stone	13	19	7	1	1	1	3	45
Webber Ele.	20	27	8	6	4	9	4	78
Zilwaukee	0	0	0	0	0	0	0	0
TOTAL	157	219	112	22	34	46	41	631

*Count as of March 11, 1988 tracking of students.

APPENDIX A

1987-88 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: **State Bilingual, Total Participants**

Building	7	8	9	Total
Central Junior	7	1	0	8
Arthur Eddy Jr.	0	1	0	1
North Intermediate	14	15	2	31
South Intermediate	13	1	8	22
Webber Junior	18	15	10	43
TOTAL	52	33	20	105

1987-88 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: **State Bilingual Total Participants**

Building	9	10	11	12	Total
Arthur Hill	0	33	3	22	58
Saginaw High	1	8	0	0	9
TOTAL	1	41	3	22	67

*Count as of March 11, 1988 tracking of students.

APPENDIX A

1987-88 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: Migrant, Total Participants

Building	K	1	2	3	4	5	6	Total
E. Baillie	3	1	0	1	0	0	0	5
Coulter	0	2	2	1	0	3	1	9
Emerson	2	3	2	2	0	3	1	13
Fuerbringer	1	1	0	0	0	0	0	2
N. Haley	4	7	6	4	2	3	2	28
Handley	0	0	2	1	0	1	2	6
Heavenrich	0	2	0	0	0	1	1	4
Herig	1	0	0	2	1	1	1	6
Houghton	1	1	1	0	0	1	1	5
Jerome	0	1	2	1	0	1	0	5
Jones	5	4	4	3	3	2	1	22
Kempton	1	0	0	1	1	0	0	3
Longfellow	1	2	0	0	2	2	2	9
Longstreet	1	1	0	2	0	0	1	5
J. Loomis	5	5	5	4	4	4	5	32
Merrill Park	1	4	1	2	2	1	2	13
C. Miller	0	1	1	1	1	0	1	5
J. Moore	1	1	2	3	2	0	2	11
Morley	0	0	1	0	1	0	0	2
J. Rouse	7	15	8	7	11	3	4	55
Salina	1	3	1	1	1	0	0	7
Stone	6	3	3	5	4	1	2	24
Webber Ele.	4	11	2	8	8	3	2	38
Zilwaukee	0	0	0	0	0	1	0	1
TOTAL	45	68	43	49	43	31	31	310

*Count as of March 11, 1988 tracking of students.

APPENDIX A

1987-88 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: Migrant, Total Participants

Building	7	8	9	Total
Central Junior	3	3	3	9
Arthur Eddy Jr.	3	0	1	4
North Intermediate	10	6	8	24
South Intermediate	11	7	6	24
Webber Junior	16	15	6	37
TOTAL	43	31	24	98

1987-88 COUNT OF PROGRAM PARTICIPANTS*

PROGRAM: Migrant, Total Participants

Building	9	10	11	12	Total
Arthur Hill	0	13	9	7	29
Saginaw High	0	2	4	0	6
TOTAL	0	15	13	7	35

*Count as of March 11, 1988 tracking of students.

APPENDIX B

IDENTIFICATION AND ELIGIBILITY PROCEDURES FOR STATE BILINGUAL AND MIGRANT STUDENTS

State Bilingual

The first step in the procedures is that of a student identification. Potential students are identified by means of a Home Language Survey. The survey is designed to determine if: 1) the native or first language is other than English or; 2) a language other than English is regularly used in the student's home or environment. Students in grades K-2 eligible for the program on the basis of the Home Language Survey and parental permission. Students in grades 3-12 go through a more extensive eligibility system which is described below.

In addition to the Home Language Survey, students in grades 3-12 are also tested on one or two instruments for program eligibility. For students who are new or have never been in the Bilingual program, the first is a test of oral English proficiency. In Saginaw, the Language Assessment Battery (LAB) test is used for this purpose and is usually administered in the fall of each year. If the student scores at or below the 40th percentile, then the student is eligible. However, if the student scores above the 40th percentile, then the student is given an English reading achievement test. The California Achievement Test (CAT) is used for this purpose. If the student scores at or below the 40th percentile, then the student is eligible for the program. Finally, parental permission is needed for program participation.

APPENDIX B

Students in grades 3-12 who were in the Bilingual program the previous year go through a somewhat different eligibility procedure. These students are subject to a program exit criterion which is based on the student's post-test English reading achievement score. If the student's post-test score remains at or below the 40th percentile, the student is ineligible. However, eligibility is based on either the oral English language proficiency test score or the English reading achievement test score. In addition, a score that is used for eligibility is to be the result of a test administration no earlier than the spring of the preceding school year. It is, therefore, possible for a student to exceed the 40th percentile on the reading achievement test and become eligible when retested with the oral English proficiency test. The final eligibility requirement is that students:

> ... shall be enrolled in the Bilingual instruction program for three years or until the child achieves a level of proficiency in English language skills sufficient to receive an equal educational opportunity in the regular school program, whichever comes first.[1]

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[1] Administrator's Manual for Bilingual Education Programs in Michigan 1979-80. Bilingual Education Office, Michigan Department of Education, February, 1979, Appendix A, page 4.

APPENDIX B

Migrant

Eligibility for the Migrant program is based solely on whether a student is one of three Migrant designations. The district does, however, attempt to serve those students with the greatest academic need, and nearly all Migrant students scored at or below the 40th percentile on an English reading achievement test.

The three designations of Migrant students are:

1) Interstate: Student has moved within the last year across state boundaries.

2) Intrastate: Student has moved within the last year across school district boundaries within the state.

3) Five Year Settled Out: Student has remained within a school district for at least five years.

APPENDIX B

PROCEDURES FOR THE IDENTIFICATION OF STUDENTS ELIGIBLE FOR BILINGUAL EDUCATION FUNDING SUMMARY FLOW CHART

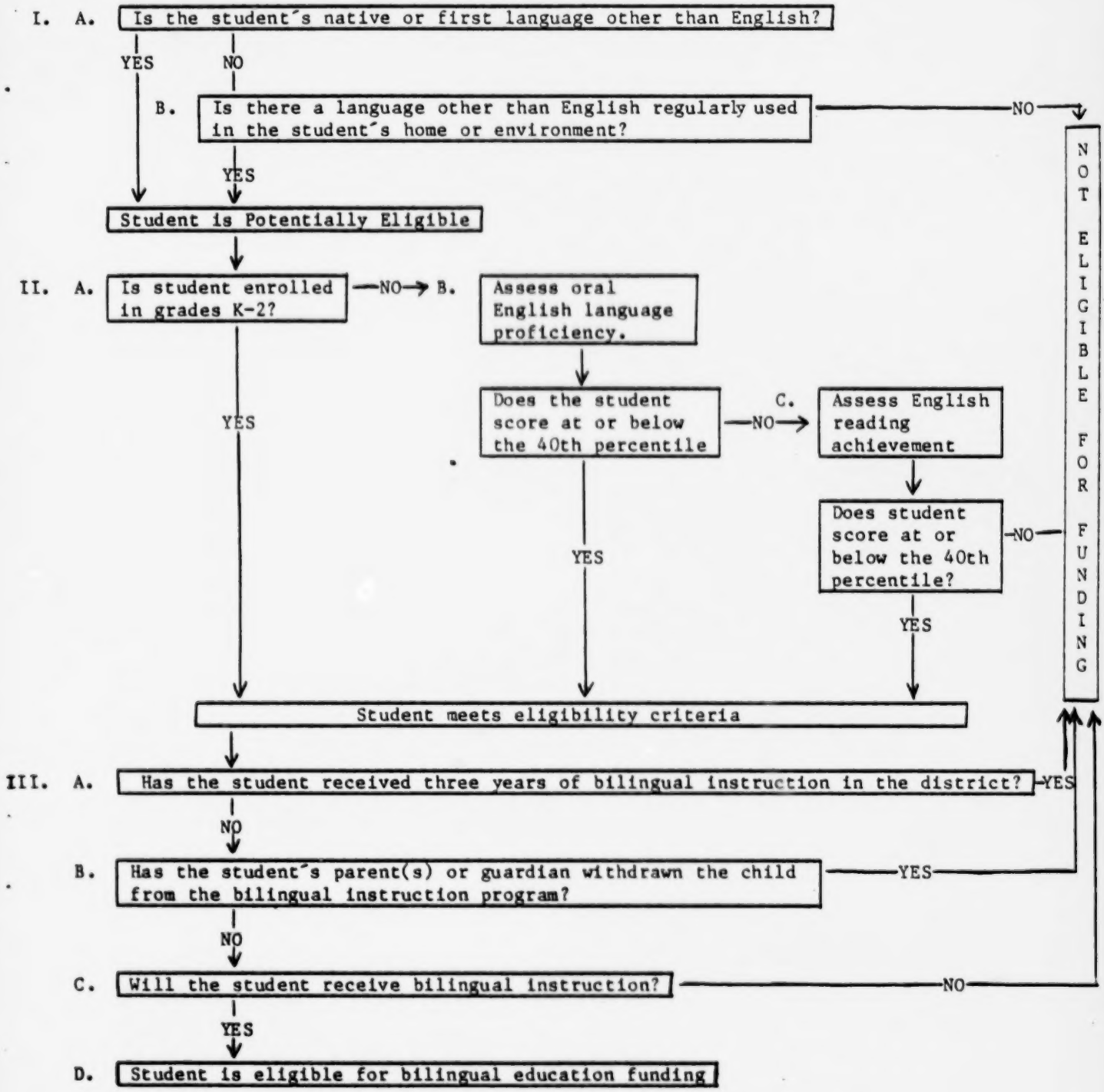
I. A. Is the student's native or first language other than English?
YES
NO
B. Is there a language other than English regularly used in the student's home or environment?
NO
YES
Student is Potentially Eligible
II. A. Is student enrolled in grades K-2?
NO
B. Assess oral English language proficiency.
YES
Does the student score at or below the 40th percentile
C. Assess English reading achievement
NO
YES
Does student score at or below the 40th percentile?
NO
YES
NOT ELIGIBLE FOR FUNDING
Student meets eligibility criteria
III. A. Has the student received three years of bilingual instruction in the district?
YES
NO
B. Has the student's parent(s) or guardian withdrawn the child from the bilingual instruction program?
YES
NO
C. Will the student receive bilingual instruction?
NO
YES
D. Student is eligible for bilingual education funding

TABLE C.1. MEAN PERCENTILE GAIN/LOSS IN READING BY BUILDING AND GRADE FOR 1-6 STATE BILINGUAL, BASED ON PRE- TO POST-TESTING ON CAT, 1987-88 (SPRING TO SPRING).

Building	GRADE 1 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 2 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 3 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 4 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 5 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 6 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss
E. Baillio																								
Coulter	7	11.0	31.0	20.0	2	30.0	31.0	1.0	1	37.0	59.3	22.3												
Emerson	6	11.0	10.0	-1.0	7	61.2	44.3	-16.9	2	10.0	22.3	11.5					1	22.3	21.0	-1.3				
Fuerbringer	3	37.0	14.8	-22.2	7	55.6	40.7	-14.9									1	23.0	30.0	6.2	2	23.0	17.1	-6.7
Belle Haley	3	31.7	42.5	10.0	5	30.0	31.7	1.7					1	30.0	17.1	-12.5					1	35.2	23.0	-11.4
Handley																								
Heavenrich	1	84.0	80.3	15.5	1	5.3	18.3	13.0																
Herig	5	31.7	76.2	44.5	5	85.2	80.3	-4.9					1	22.3	30.0	7.7	1	33.5	15.9	-17.6				
Houghton	3	28.4	44.3	15.9									1	17.1	26.0	9.7	1	31.0	68.2	36.4	1	23.0	25.3	1.5
Jerome	10	57.5	21.0	-36.5	2	31.0	51.0	20.0	1	15.9	21.0	5.1	7	14.0	38.7	23.9	2	22.3	14.0	-7.5	4	28.0	33.5	6.7
Jones	7	18.3	73.1	54.0	1	4.0	3.9	-0.9					1	5.3	2.0	-2.5	7	23.0	25.3	1.5				
Kempton	3	17.1	36.9	19.0	4	51.0	28.4	-23.4	1	10.3	0.4	-9.9					1	22.3	7.7	-14.6				
Longfellow	0	36.9	30.0	-6.9	11	40.6	42.5	1.9	1	40.6	54.2	13.6	3	20.5	48.1	10.6	1	7.0	22.3	15.3	2	37.0	37.0	0.0
Longstreet	1	48.1	71.5	23.4	2	48.1	59.3	11.2					2	38.7	28.5	-10.2	1	28.5	46.3	17.8	1	38.7	40.6	1.9
J. Loomis	4	46.2	12.7	-33.5	8	37.0	17.1	-19.9					1	15.9	21.0	5.1	2	23.0	30.0	6.2	0	23.0	26.0	3.0
Merrill Park	6	57.5	48.1	-9.4	5	17.1	28.4	11.3					1	23.0	19.0	-4.2	3	22.3	50.0	27.7	4	28.4	33.5	5.1
C. Miller	6	38.7	61.2	22.5	3	51.0	28.5	-23.3	1	23.0	55.6	31.0					2	30.0	25.3	-4.7				
J. Moore	1	48.1	12.7	-35.4	1	90.0	87.3	-2.7					1	26.0	15.9	-10.9	4	44.1	31.7	-12.4				
Morley					2	9.2	12.7	3.5																
J. Rouse	10	23.0	51.0	28.0	10	35.2	37.0	1.0	2	21.0	30.0	9.0	7	22.3	43.6	21.3	7	14.0	21.0	6.2	7	30.0	44.3	14.3
Salina	0	10.0	51.0	41.0	1	5.3	17.1	11.0	1	30.0	18.3	-11.7												
Stone	5	35.2	61.2	26.0	7	46.2	31.7	-14.5	1	10.0	13.7	3.7	1	10.0	0.4	-2.4	1	30.0	25.3	-13.5	3	25.3	31.7	6.4
Webber Ele.	14	50.0	31.7	-18.3	7	30.0	48.1	18.1	5	26.0	38.7	11.9	4	20.5	22.3	-6.2	9	23.0	21.0	-2.0	4	30.0	22.3	-7.7
Zilwaukee																								
TOTAL	100	35.2	40.0	4.8	91	42.0	35.0	-7.0	16	22.0	31.0	9.0	31	20.7	28.0	7.3	39	22.7	25.1	2.4	35	28.2	31.0	2.8

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APPENDIX C

TABLE C.2. MEAN PERCENTILE GAIN/LOSS IN READING BY BUILDING AND GRADE FOR 7-12 STATE BILINGUAL, BASED ON PRE- TO POST-TESTING ON CAT, 1987-88 (SPRING TO SPRING).

Building	GRADE 7				GRADE 8				GRADE 9				GRADE 10				GRADE 11				GRADE 12			
	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss
Arthur Eddy Jr.																								
Central Jr.	6	22.3	19.8	-2.7																				
North Int.	9	30.0	21.0	-9.0	12	21.0	19.6	-1.4	2	15.9	10.0	-5.9												
South Int.	13	28.5	19.8	-8.9	5	35.2	26.8	-8.4	5	13.0	13.7	0.7												
Webber Jr.	16	19.8	17.1	-2.5	13	13.7	13.7	0.0	8	22.3	21.0	-1.3												
Arthur Hill													5	25.3	23.8	-1.5	3	25.3	25.3	0.0	5	22.3	18.3	-4.0
Saginaw High													4	4.3	9.0	4.7								
TOTAL	44	24.1	18.7	-5.4	26	17.9	16.9	-1.0	13	17.7	15.8	-1.9	9	10.8	15.6	5.0	3	26.0	26.0	0.0	5	22.0	18.0	-4.0

APPENDIX C

TABLE C.3. MEAN PERCENTILE GAIN/LOSS IN MATHEMATICS BY BUILDING AND GRADE FOR 1-6 STATE BUILDINGS, BASED ON PRE- TO POST-TESTING ON CAT, 1987-88 (SPRING TO SPRING).

Building	GRADE 1 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 2 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 3 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 4 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 5 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	GRADE 6 Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss
E. Baillie																								
Coulter					2	42.5	44.4	1.9	1	84.1	51.8	-32.3												
Emerson					7	61.2	66.5	5.3	2	28.5	38.7	10.2					1	18.3	19.6	1.3				
Fuerbringer					7	51.8	57.5	5.7									1	40.0	35.2	-5.4	2	28.5	46.3	17.8
Belle Haley					5	64.8	50.0	-14.8					1	19.6	26.8	7.2					1	42.5	26.8	-15.7
Handley																								
Heavenrich					1	30.0	92.3	62.3																
Herig					5	93.5	61.3	-32.2					1	21.0	37.0	16.0	1	48.9	49.5	0.6				
Houghton													1	28.5	28.5	0.0	1	59.3	60.2	0.9	1	44.3	55.6	11.3
Jerome					2	82.9	89.1	6.2	1	13.7	11.8	-1.9	7	37.0	59.3	22.3	2	25.3	28.5	3.2	4	40.8	42.5	1.9
Jones					1	73.1	50.0	-23.1	1	57.5	37.0	-20.5	1	17.1	15.9	-1.2	2	25.3	31.7	6.4				
Kempton					4	61.2	63.0	1.8	1	53.8	31.8	-22.0					1	26.8	31.8	5.0				
Longfellow					11	74.7	48.1	-26.6	1	80.3	76.2	-4.1	3	13.7	44.3	30.6	1	25.3	53.7	28.4	2	44.3	92.9	48.6
Longstreet					2	59.3	80.3	21.0					2	37.0	66.5	29.5	1	50.0	26.8	-23.2	1	71.5	92.3	20.8
J. Loomis					8	21.0	22.3	1.3					1	28.4	63.0	34.6	2	63.0	50.0	-13.0	8	50.0	55.6	5.6
Merrill Park					5	57.5	31.7	-25.8					1	18.3	31.7	13.4	3	18.3	23.8	5.5	4	26.8	50.0	23.2
C. Miller					3	77.6	76.2	-1.4	1	55.6	68.2	12.6					2	61.2	63.0	1.8				
J. Moore					1	96.4	40.6	-55.8					1	50.5	5.3	-45.2	4	50.0	48.4	-1.6				
Morley					2	19.6	22.3	2.7																
J. Rouse					10	71.5	42.5	-29.0	2	14.8	80.3	65.5	7	43.6	25.3	-18.3	7	22.3	35.2	12.9	7	81.2	51.6	-9.6
Salina					1	14.8	22.3	7.5	1	66.5	17.1	-49.4												
Stone					7	80.3	57.5	-22.8	1	30.0	42.4	12.4	1	22.3	18.3	-4.0	1	84.8	48.1	-36.7	3	12.7	59.3	46.6
Webber Ele.					7	46.2	66.5	20.3	5	66.5	55.6	-10.9	4	36.7	30.7	0.0	9	30.0	31.7	1.7	4	66.5	42.5	-24.0
Zilwaukee																								
TOTAL					91	62.0	52.0	-10.0	17	50.0	49.0	-1.0	31	29.1	36.1	7.0	39	32.2	36.1	3.9	35	43.7	53.7	10.0

TABLE C.4. MEAN PERCENTILE GAIN/LOSS IN MATHEMATICS BY BUILDING AND GRADE FOR 7-12 SIXTH BILINGUAL, BASED ON PRE- TO POST-TESTING ON CAT, 1987-88 (SPRING TO SPRING).

Building	GRADE 7				GRADE 8				GRADE 9				GRADE 10				GRADE 11				GRADE 12			
	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss
Arthur Eddy Jr.																								
Central Jr.	6	55.6	38.8	-16.8																				
North Int.	9	53.8	48.1	-5.7	12	42.5	35.2	-7.3	2	25.3	31.8	6.5												
South Int.	13	48.2	31.8	-16.4	1	23.8	19.6	-4.2	5	30.0	35.2	5.2												
Webber Jr.	16	31.7	23.8	-7.9	13	11.8	13.7	1.9	6	28.5	30.0	1.5												
Arthur Hill													5	50.0	46.3	-3.7	3	21.0	26.8	5.8	5	30.0	19.6	-10.4
Saginaw High													4	10.8	19.7	8.9								
TOTAL	44	43.7	31.9	-11.8	26	22.8	22.2	-0.6	13	28.4	31.7	3.3	9	25.3	31.1	5.8	3	21.0	27.0	6.0	5	29.0	19.5	-9.5

TABLE C.5. MEAN PERCENTILE GAIN/LOSS IN READING BY BUILDING AND GRADE FOR 1-6 MIGRANT, BASED ON PRE- TO POST-TESTING ON CAT, 1987-88 (SPRING TO SPRING).

Building	GRADE 1				GRADE 2				GRADE 3				GRADE 4				GRADE 5				GRADE 6			
	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss	Number Tested	Percentile Pre Mean	Percentile Post Mean	Mean Gain/ Loss
E. Baillie	1	44.3	48.2	1.9					1	8.4	10.0	1.6												
Coulter	2	19.8	57.5	37.9	2	12.7	18.3	5.6	1	71.5	68.2	-3.3					1	64.8	71.5	6.7	1	50.0	40.6	-9.4
Emerson	1	17.1	3.2	-13.9	1	8.4	11.8	3.4	2	11.8	17.1	5.3					3	31.8	23.8	-8.0	1	55.6	44.3	-11.3
Feerbringer																								
Belle Haley	3	23.8	44.3	20.5	6	38.7	33.5	-5.2	4	50.0	53.7	3.7	2	30.0	35.2	5.2	3	40.6	38.7	-1.9	2	53.7	55.6	1.9
Handley					2	93.5	99.0	5.5	1	64.8	68.2	3.4									2	82.9	82.9	0.0
Heavenrich																	1	14.8	21.0	6.2	1	68.5	65.0	-3.5
Herig									2	79.0	82.9	3.9	1	46.2	31.7	-14.5					1	44.3	50.0	5.7
Houghton					1	66.5	76.2	9.7									1	31.7	68.2	36.5				
Jerome					1	51.0	55.6	3.0																
Jones	2	18.3	73.1	54.8	1	4.8	3.9	-0.9	3	19.6	19.6	0.0	2	18.3	13.7	-4.6	2	33.5	36.9	3.4	1	40.6	40.6	0.0
Kempton									1	68.2	88.2	20.0												
Longfellow	1	40.6	13.7	-26.9									1	30.0	71.5	41.5	2	25.3	33.4	8.1	1	11.8	22.3	10.5
Longstreet									2	36.9	71.5	34.6									1	38.7	40.6	1.9
J. Loomis	4	35.2	7.7	-27.5	3	40.6	25.3	-15.3	3	26.8	19.6	-7.2	4	19.6	17.1	-2.5	3	35.2	42.4	7.2	4	21.0	25.3	4.3
Merrill Park	3	48.1	46.2	-1.9	1	71.5	40.6	-30.9	1	71.5	64.8	-6.7	2	84.1	61.2	-22.9	1	70.0	59.3	-10.7	2	30.0	22.3	-7.7
C. Miller	1	84.1	81.6	-2.5	1	98.8	66.8	-32.0													1	38.9	53.7	16.8
J. Moore									1	51.8	57.5	5.7												
Morley					2	26.8	15.9	-10.9					1	40.6	40.6	0.0								
J. Mouse	5	22.3	57.5	35.2	7	48.1	25.3	-22.8	7	26.8	40.6	13.8	9	36.9	33.4	-3.5	2	33.4	28.4	-5.0	4	19.6	22.3	2.7
Salina	3	5.3	53.7	48.4	1	5.3	17.1	11.8																
Stone	1	51.8	68.2	16.4	3	61.2	50.0	-11.2	4	30.0	36.9	6.9	2	46.2	61.2	15.0	1	57.5	80.3	22.8				
Webber Ele. Milwaukee	6	51.8	40.6	-11.2	2	18.3	23.8	5.5	5	50.0	50.0	0.0	6	36.9	22.3	-14.6	2	40.6	40.6	0.0	2	38.9	35.2	-1.7
TOTAL	33	46.0	43.5	-2.4	34	44.3	30.5	-13.8	38	35.3	43.3	8.0	30	35.7	31.7	-4.0	22	36.5	39.6	3.1	24	35.5	36.4	0.9

TABLE C.6. MEAN PERCENTILE GAIN/LOSS IN READING BY BUILDING AND GRADE FOR 7-12 MIGRANT, BASED ON PRE- TO POST-TESTING ON CAT, 1987-88 (SPRING TO SPRING).

Building	GRADE 7				GRADE 8				GRADE 9				GRADE 10				GRADE 11				GRADE 12			
		Percentile		Mean		Percentile		Mean		Percentile		Mean		Percentile		Mean		Percentile		Mean		Percentile		Mean
	Number Tested	Pre Mean	Post Mean	Gain/ Loss	Number Tested	Pre Mean	Post Mean	Gain/ Loss	Number Tested	Pre Mean	Post Mean	Gain/ Loss	Number Tested	Pre Mean	Post Mean	Gain/ Loss	Number Tested	Pre Mean	Post Mean	Gain/ Loss	Number Tested	Pre Mean	Post Mean	Gain/ Loss
Arthur Eddy Jr.	2	14.8	8.4	-6.4																				
Central Jr.	2	40.6	36.9	-3.7																				
North Int.	2	90.8	59.3	-31.5	1	14.8	17.1	2.3	5	30.0	30.0	0.0												
South Int.	8	33.5	21.0	-12.5	4	33.5	30.0	-3.5	4	28.4	28.4	0.0												
Webber Jr.	13	25.3	22.3	-3.0	10	33.5	25.3	-8.2	4	40.6	28.5	-12.1												
Arthur Hill													1	10.0	2.5	-7.5	2	37.0	33.5	-3.5				
Saginaw High													1	8.4	12.7	4.3	1	7.0	17.1	10.1				
TOTAL	27	32.0	23.4	-8.6	15	31.4	25.9	-5.5	13	31.8	29.1	-2.7	2	9.7	8.4	-3.3	3	22.0	26.7	4.7				

TABLE E.7. MEAN PERCENTILE GAIN/LOSS IN MATHEMATICS BY BUILDING AND GRADE FOR 1-6 MIGRANT, BASED ON PRE- TO POST-TESTING ON CAT, 1987-88 (SPRING TO SPRING).

Building	GRADE 1 Number Tested	GRADE 1 Percentile Pre Mean	GRADE 1 Percentile Post Mean	GRADE 1 Mean Gain/ Loss	GRADE 2 Number Tested	GRADE 2 Percentile Pre Mean	GRADE 2 Percentile Post Mean	GRADE 2 Mean Gain/ Loss	GRADE 3 Number Tested	GRADE 3 Percentile Pre Mean	GRADE 3 Percentile Post Mean	GRADE 3 Mean Gain/ Loss	GRADE 4 Number Tested	GRADE 4 Percentile Pre Mean	GRADE 4 Percentile Post Mean	GRADE 4 Mean Gain/ Loss	GRADE 5 Number Tested	GRADE 5 Percentile Pre Mean	GRADE 5 Percentile Post Mean	GRADE 5 Mean Gain/ Loss	GRADE 6 Number Tested	GRADE 6 Percentile Pre Mean	GRADE 6 Percentile Post Mean	GRADE 6 Mean Gain/ Loss
E. Baillie									1	13.7	5.8	-7.9												
Coulter					2	42.4	35.2	-7.2	1	55.6	85.2	29.6					1	95.1	68.2	-26.9	1	38.7	82.9	44.2
Emerson					1	22.3	19.6	-2.7	2	22.3	25.3	3.0					3	26.8	28.4	1.6	1	51.8	19.6	-32.2
Fuerbringer																								
Belle Haley					6	81.6	53.7	-27.9	4	77.6	90.0	12.4	2	85.2	55.6	-29.6	3	51.8	63.0	11.2	2	73.1	88.2	15.1
Handley					2	92.3	96.8	4.5	1	84.1	80.3	-3.8									2	88.2	90.8	2.6
Heavenrich																	1	28.5	66.5	38.0	1	96.4	80.3	-16.1
Herig									2	88.5	91.6	25.1	1	38.7	38.7	0.0					1	59.3	80.3	21.0
Houghton					1	85.2	77.6	-7.6									1	59.3	68.2	8.9				
Jerome					1	79.0	92.3	13.3																
Jones					1	73.1	50.0	-23.1	3	61.2	61.2	0.0	2	26.8	35.2	8.4	2	38.7	57.5	18.8	1	74.7	69.9	-4.8
Kempton									1	44.3	68.2	23.9												
Longfellow													1	71.5	97.7	26.2	2	57.5	76.2	18.7	1	22.3	55.6	33.3
Longstreet									2	91.6	94.1	2.5									1	71.5	92.3	20.8
J. Loomis					3	35.2	50.0	14.8	3	38.9	22.3	-14.6	4	44.3	48.1	3.8	3	77.6	61.2	-16.4	4	51.8	61.2	9.4
Merrill Park					1	92.9	46.2	-46.7	1	38.7	90.0	51.3	2	96.8	92.9	-3.9	1	71.5	68.2	-3.3	2	21.0	40.6	19.6
C. Miller					1	99.0	96.8	-2.2													1	91.6	88.2	-3.4
J. Moore									1	48.2	61.2	15.0												
Morley					1	25.3	13.7	-11.6					1	14.8	35.2	20.4								
J. Mouse					7	68.2	57.5	-10.7	7	35.2	76.2	41.0	9	38.7	26.8	-11.9	2	26.8	31.7	4.9	4	51.8	51.8	0.0
Salina					1	14.8	22.3	7.5																
Stone					3	89.1	73.1	-16.0	4	59.3	40.6	-18.7	2	57.5	74.7	17.2	1	61.2	95.6	34.4				
Webber Ele.					2	22.3	31.7	9.4	5	81.6	81.6	0.0	6	50.0	25.3	-24.7	2	28.4	44.3	15.9	2	63.0	53.7	-9.3
Zilwaukee																								
TOTAL					33	68.5	57.7	-10.8	38	57.1	68.4	11.3	30	50.7	41.4	-9.3	22	48.6	56.1	7.5	24	59.4	65.6	6.2

APPENDIX C

TABLE C.8. MEAN PERCENTILE GAIN/LOSS IN MATHEMATICS BY BUILDING AND GRADE FOR 7-12 MIGRANT, BASED ON PRE- TO POST-TESTING ON CAT, 1987-88 (SPRING TO SPRING).

Building	GRADE 7 Number Tested	GRADE 7 Percentile Pre Mean	GRADE 7 Percentile Post Mean	GRADE 7 Mean Gain/ Loss	GRADE 8 Number Tested	GRADE 8 Percentile Pre Mean	GRADE 8 Percentile Post Mean	GRADE 8 Mean Gain/ Loss	GRADE 9 Number Tested	GRADE 9 Percentile Pre Mean	GRADE 9 Percentile Post Mean	GRADE 9 Mean Gain/ Loss	GRADE 10 Number Tested	GRADE 10 Percentile Pre Mean	GRADE 10 Percentile Post Mean	GRADE 10 Mean Gain/ Loss	GRADE 11 Number Tested	GRADE 11 Percentile Pre Mean	GRADE 11 Percentile Post Mean	GRADE 11 Mean Gain/ Loss	GRADE 12 Number Tested	GRADE 12 Percentile Pre Mean	GRADE 12 Percentile Post Mean	GRADE 12 Mean Gain/ Loss
Arthur Eddy Jr.	2	28.5	44.3	15.8																				
Central Jr.	2	53.7	53.7	0.0																				
North Int.	7	94.1	80.3	-13.8	1	14.8	13.7	-1.1	5	44.3	31.7	-12.6												
South Int.	8	50.0	38.7	-11.3	4	38.7	28.9	-11.8	4	51.9	38.7	-13.2												
Webber Jr.	13	33.5	18.3	-15.2	10	21.0	37.0	16.0	4	19.8	31.7	12.1												
Arthur Hill													1	55.8	1.4	-54.2	2	37.0	33.5	-3.5				
Saginaw High													1	12.7	17.1	4.4	1	25.3	31.7	6.4				
TOTAL	27	43.0	31.4	-11.6	15	24.5	31.4	6.9	13	38.8	34.0	-2.8	2	28.0	6.0	-22.0	3	27.7	21.3	-6.4				